Appendix A –
DAB Subcommittee Goals & Objectives

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5/14/98

DAB Subcommittee Goals & Objectives

(as adopted by the Subcommittee on May 14, 1998)

Objectives

(a) To study IBOC DAB systems and determine if they provide broadcasters and users with:

- A digital signal with significantly greater quality and durability than available from the AM and FM analog systems that presently exist in the United States;
- A digital service area that is at least equivalent to the host station's analog service area while simultaneously providing suitable protection in co-channel and adjacent channel situations;
- A smooth transition from analog to digital services.

(b) To provide broadcasters and receiver manufacturers with the information they need to make an informed decision on the future of digital audio broadcasting in the United States, and if appropriate to foster its implementation.

Goals

To meet its objectives, the Subcommittee will work towards achieving the following goals:

(a) To develop a technical record and, where applicable, draw conclusions that will be useful to the NRSC in the evaluation of IBOC systems;

(b) To provide a direct comparison between IBOC DAB and existing analog broadcasting systems, and between an IBOC signal and its host analog signal, over a wide variation of terrain and under adverse propagation conditions that could be expected to be found throughout the United States;

(c) To fully assess the impact of the IBOC DAB signal upon the existing analog broadcast signals with which they must co-exist;

(d) To develop a testing process and measurement criteria that will produce conclusive, believable and acceptable results, and be of a streamlined nature so as not to impede rapid development of this new technology;

(e) To work closely with IBOC system proponents in the development of their laboratory and field test plans, which will be used to provide the basis for the comparisons mentioned in Goals (a) and (b);

(f) To indirectly participate in the test process, by assisting in selection of (one or more) independent testing agencies, or by closely observing proponent-conducted tests, to insure that the testing as defined under Goal (e) is executed in a thorough, fair and impartial manner.

Appendix B –
IBOC DAB System Test Guidelines – Part I –
Laboratory Tests

(this document is available on the NRSC website)

Appendix C –
IBOC DAB System Test Guidelines – Part II –
Field Tests

(this document is available on the NRSC website)

Appendix D –
IBOC DAB System Evaluation Guidelines

(this document is available on the NRSC website)

Appendix E –
NRSC IBOC
System Evaluation Matrix

EVALUATION CRITERIA DESCRIPTIONS – IBOC RECEIVER RESULTS

Audio quality – the fundamental audio quality of the IBOC system, all channel impairments aside. This assessment is to be made with respect to the audio quality of the existing analog broadcasting service as represented by the NRSC broadcast chain audio.

Service area – the geographical area surrounding the transmit station which can be expected to receive a listenable (usable) radio signal. Applied separately to IBOC audio and IBOC auxiliary data capacity (i.e. degree of correlation needs to be established).

Durability – characterized by an IBOC system design's ability to withstand interference from other radio signals (co-channel, 1st adjacent channel, and 2nd adjacent channel signals in particular) and to withstand the impairing effects of the RF channel. Applied separately to IBOC audio and IBOC auxiliary data capacity (i.e. degree of correlation needs to be established).

Acquisition performance – the characteristics of how a receiver "locks on" to a radio signal, including acquisition time (the elapsed time between tuning to a channel and when the audio on that channel is first heard), and audio quality following acquisition. Applies to both IBOC audio and IBOC auxiliary data capacity (in the latter case, performance metric is acceptable bit and/or frame error rate).

Auxiliary data capacity – characteristics of the data capacity supported by an IBOC system in excess of that needed to deliver the IBOC audio signal, including available throughput, nature of capacity (opportunistic versus continuously available), and transmission quality and durability through the channel (bit error rate and/or other relevant digital data transmission metrics as a function of impairments).

Behavior as signal degrades – how an IBOC system performs as its signal degrades, in particular, how abruptly the signal becomes unusable, and how the level of quality of the signal changes as the edge of coverage is approached. Note that, due to the complexities of RF signal propagation, "edge of coverage" performance may be experienced throughout a station's service area and is not restricted simply to regions near or beyond the theoretical protected contour.

Stereo separation – the amount of stereo separation present in the IBOC audio signal, and how it varies as a function of channel and received signal conditions.

Flexibility – represents the potential of an IBOC system to be adapted by broadcasters and manufacturers to meet the needs of listeners and consumers, both present and future. [Primarily addressed in system description portion of submission; test results not expected to provide direct evidence of system flexibility.]

EVALUATION CRITERIA DESCRIPTIONS – ANALOG RECEIVER RESULTS

Host analog signal impact – changes in performance of a host analog signal (main channel audio and any subcarriers) as a result of the presence of the IBOC digital signal energy associated with that host.

Non-host analog signal impact – changes in the performance of a (desired) analog signal (main channel audio only) as a result of the presence of interfering IBOC signals. Interfering signals of interest include co-channel, 1st, and 2nd adjacent channel signals, individually and in combinations.

FM IBOC System Evaluation Matrix – Lab Tests – rev. 4

Notes:

- A checkmark ("✓ ") indicates that the results from a particular test are expected to apply to the indicated evaluation criteria.
- Test A (Calibration) provides a quality check on system testing as a whole and is not used directly for system evaluation.
- Columns marked "IBOC" represent criteria evaluated using IBOC receiver; those marked "ANALOG" represent criteria evaluated using analog (i.e. non-IBOC) receiver.

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	**IBOC system performance with AWGN**									
1)	Linear channel, no interferers									
2)	Linear channel, 1st-adjacent channel interference									
3)	Multipath fading channel, no interferers		✓	✓		✓	✓	✓		
4)	Multipath fading channel, 1st-adjacent channel interference									
C	**IBOC system performance with special impairments**									
1)	Impulse noise									
2)	Impulse noise, 1st-adjacent channel interference									
3)	Narrowband noise									
4)	Narrowband noise, 1st-adjacent channel interference									
5)	Airplane flutter			✓		✓	✓	✓		
6)	Airplane flutter, 1st-adjacent channel interference									
7)	Weak signal									
8)	Weak signal, 1st-adjacent channel interference		✓							
9)	Delay spread/doppler									
10)	Delay spread/doppler, 1st-adjacent channel interference									

FM IBOC System Evaluation Matrix – Lab Tests – rev. 4

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
D	**IBOC "digital-to-digital" compatibility performance**									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference									
4)	Single 2nd-adjacent channel interference		✓	✓		✓	✓	✓		
5)	Single 2nd-adjacent channel interference w/1st adj. channel interference									
6)	Simultaneous upper and lower 2nd-adjacent channel interference									
7)	Simultaneous upper and lower 2nd-adjacent channel interference with non-linearity									
E	**IBOC "digital-to-digital" compatibility performance in a multipath fading channel**									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference									
4)	Single 2nd-adjacent channel interference		✓	✓		✓	✓	✓		
5)	Single 2nd-adjacent channel interference w/1st adj. channel interference									
6)	Simultaneous upper and lower 2nd-adjacent channel interference									
7)	Simultaneous upper and lower 2nd-adjacent channel interference with non-linearity									

FM IBOC System Evaluation Matrix – Lab Tests – rev. 4

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
F	**IBOC "digital-to-analog" compatibility performance**									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference									
4)	Single 2nd-adjacent channel interference									✓
5)	Single 2nd-adjacent channel interference w/1st adj. channel interference									
6)	Simultaneous upper and lower 2nd-adjacent channel interference									
G	**IBOC "digital-to-analog" compatibility performance in a multipath fading channel**									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference									
4)	Single 2nd-adjacent channel interference									✓
5)	Single 2nd-adjacent channel interference w/1st adj. channel interference									
6)	Simultaneous upper and lower 2nd-adjacent channel interference									
H	**IBOC "analog-to-digital" compatibility performance**									
1)	Single 1st-adjacent channel interference									
2)	Simultaneous upper and lower 1st-adjacent channel interference		✓	✓		✓	✓	✓		
3)	Single 2nd-adjacent channel interference									

FM IBOC System Evaluation Matrix – Lab Tests – rev. 4

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
I	**IBOC "analog-to-digital" compatibility performance in a multipath fading channel**									
1)	Single 1st-adjacent channel interference									
2)	Simultaneous upper and lower 1st-adjacent channel interference		✓	✓		✓	✓	✓		
3)	Single 2nd-adjacent channel interference									
4)	Simultaneous upper and lower 2nd-adjacent channel interference									
J	**IBOC acquisition/re-acquisition performance**									
1)	Short interruption, linear channel									
2)	Long interruption , linear channel									
3)	Short interruption, linear channel, AWGN									
4)	Long interruption, linear channel, AWGN									
5)	Short interruption, linear channel, 1st-adj. channel interference									
6)	Long interruption, linear channel, 1st-adj. channel interference				✓					
7)	Short interruption, fading channel									
8)	Long interruption, fading channel									
9)	Short interruption, AWGN, fading channel									
10)	Long interruption, AWGN, fading channel									
11)	Short interruption, fading channel, 1st-adj. channel interference									
12)	Long interruption, fading channel, 1st-adj. channel interference									

FM IBOC System Evaluation Matrix – Lab Tests – rev. 4

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
K	**DAB quality**									
1)	Subjective assessment report of unimpaired IBOC audio quality (linear channel) versus analog FM	✓								
2)	"Long-form" DAT through IBOC system									
L	**IBOC "digital-to-host analog" compatibility performance**									
1)	Host analog main channel audio performance versus presence or absence of IBOC digital signal energy									
2)	Host analog main channel audio performance versus presence or absence of IBOC digital signal energy								✓	
3)	Host subcarrier audio and/or data performance versus presence or absence of IBOC digital signal energy									
4)	Host subcarrier audio and/or data performance versus presence or absence of IBOC digital signal energy									
M	**IBOC "host analog-to-digital" compatibility performance**									
1)	Digital audio, data transmission performance versus percent modulation of analog host signal			✓		✓				
2)	Digital audio, data transmission performance versus percent modulation of analog host signal									

FM IBOC System Evaluation Matrix – Field Tests – rev. 4

Notes:

- A checkmark ("✓") indicates that the results from a particular test are expected to apply to the indicated evaluation criteria.
- Test A (Calibration) provides a quality check on system testing as a whole and is not used directly for system evaluation.
- Columns marked "IBOC" represent criteria evaluated using IBOC receiver; those marked "ANALOG" represent criteria evaluated using analog (i.e. non-IBOC) receiver.

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	**Strong signal with low interference**									
1)	Low multipath		✓	✓		✓	✓	✓		
2)	Strong multipath									
3)	Host main channel audio compatibility								✓	
4)	Host analog 67 kHz and 92 kHz subcarrier compatibility									
C	**Single interferer**									
1)	Single 1st-adjacent channel interferer (at FCC limit)									
2)	Single 1st-adjacent channel interferer (at FCC limit) with multipath		✓	✓		✓	✓	✓		✓
3)	Single 1st-adjacent channel interferer (above FCC limit)									
4)	Single 1st-adjacent channel interferer (above FCC limit) with multipath									
D	**Two interferers**									
1)	Two simultaneous 1st-adjacent channel interferers (at FCC limit)									
2)	Two simultaneous 1st-adjacent channel interferers (at FCC limit) with multipath		✓	✓		✓	✓	✓		
3)	Two simultaneous 2nd-adjacent channel interferers									
4)	Two simultaneous 2nd-adjacent channel interferers (with multipath)									

AM IBOC System Evaluation matrix – Lab tests – rev. 4

Notes:

- A checkmark ("✓") indicates that the results from a particular test are expected to apply to the indicated evaluation criteria.
- Test A (Calibration) provides a quality check on system testing as a whole and is not used directly for system evaluation.
- Columns marked "IBOC" represent criteria evaluated using IBOC receiver; those marked "ANALOG" represent criteria evaluated using analog (i.e. non-IBOC) receiver.

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	**IBOC system performance with AWGN**									
1)	Linear channel, no interferers		✓	✓		✓	✓	✓		
C	**IBOC system performance with special impairments**									
1)	Impulse noise			✓		✓	✓	✓		
2)	Weak signal		✓							
D	**IBOC "digital-to-digital" compatibility performance**									
1)	Co-channel interference		✓	✓		✓	✓	✓		
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference									
4)	Single 2nd-adjacent channel interference									
5)	Simultaneous upper and lower 2nd-adjacent channel interference									
6)	Single 3rd-adjacent channel interference									
F	**IBOC "digital-to-analog" compatibility performance**									
1)	Co-channel interference									✓
2)	Single 1st-adjacent channel interference									
3)	Single 2nd-adjacent channel interference									

AM IBOC System Evaluation matrix – Lab tests – rev. 4

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
H	**IBOC "analog-to-digital" compatibility performance**									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
3)	Simultaneous upper and lower 1st-adjacent channel interference		✓	✓		✓	✓	✓		
4)	Single 2nd-adjacent channel interference									
3)	Simultaneous upper and lower 2nd-adjacent channel interference									
J	**IBOC acquisition/re-acquisition performance**									
1)	Short interruption, linear channel									
2)	Long interruption , linear channel				✓					
3)	Short interruption, linear channel, AWGN									
4)	Long interruption, linear channel, AWGN									
K	**DAB quality**									
1)	Subjective assessment report of unimpaired IBOC audio quality (linear channel) versus analog AM (and optionally, analog FM)	✓								
2)	"Long form" DAT through IBOC system									
L	**IBOC "digital-to-host analog" compatibility performance**									
1)	Host analog main channel audio performance versus presence or absence of IBOC digital signal energy								✓	
M	**IBOC "host analog-to-digital" compatibility performance**									
1)	Digital audio, data transmission performance versus percent modulation of analog host signal			✓		✓				

AM IBOC System Evaluation matrix – Lab tests – rev. 4

Notes:

- A checkmark ("✓ ") indicates that the results from a particular test are expected to apply to the indicated evaluation criteria.
- Test A (Calibration) provides a quality check on system testing as a whole and is not used directly for system evaluation.
- Columns marked "IBOC" represent criteria evaluated using IBOC receiver; those marked "ANALOG" represent criteria evaluated using analog (i.e. non-IBOC) receiver.

		RECEIVER UNDER TEST								
		IBOC							ANALOG	
TEST	DESCRIPTION	AUDIO QUALITY	SERVICE AREA	DURA-BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	**System performance within protected contour and low interference (day)**									
1)	Low interference (daytime)		✓	✓		✓	✓	✓		
2)	Performance with fading (daytime)									
3)	Performance with fading (nighttime)									
4)	Host main channel audio compatibility								✓	
C	**System performance within protected contour (day and night)**									
1)	Daytime performance over entire day coverage area.		✓	✓		✓	✓	✓		
2)	Nighttime performance over entire nighttime coverage area.									
3)	Daytime performance over entire day coverage area with fading.									
4)	Nighttime performance over entire nighttime coverage area with fading.									

Appendix F –
USADR submission – tests submitted

Laboratory test data (FM):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
B	BOC system performance with AWGN										
1	Linear channel, no interferers	✓	✓						Tbl. C-5 (pg. 13)	Fig. C-4 (pg. 14)	Figures illustrate BLER vs. Cd/No
3	Multipath fading, no interferers	✓			UF US RF TO				Tbl. C-5 (pg. 13)	Fig. C-4 (pg. 14)	
4	Multipath fading, 1st adj. channel interference	✓			UF		+6 +18 +24 +30		Tbl. C-5 (pg. 13)	Fig. C-5 (pg. 17)	
E	BOC "digital-to-digital" compatibility performance in multipath fading channel										
1	Co-channel interference	✓			UF	+10 +20			Tbl. C-5 (pg. 13)	Fig. C-6 (pg. 18)	
2	Single 1st-adjacent channel interference	✓			UF		+6 +18 +24 +30		Tbl. C-5 (pg. 13)	Fig. C-5 (pg. 17)	
4	Single 2nd-adjacent channel interference	✓			UF			-20	Tbl. C-5 (pg. 13)	Fig. C-7 (pg. 19)	

Laboratory test data (FM, cont.):

NO.	ITEM	CHANNEL: AWGN	CHANNEL: LINEAR	CHANNEL: NON-LINEAR	CHANNEL: FADING	INTERFERERS *D/U in dB*: CO-CHAN	INTERFERERS *D/U in dB*: 1ST-ADJ	INTERFERERS *D/U in dB*: 2ND-ADJ	DATA	GRAPH	COMMENTS
E	**IBOC digital-to-analog compatibility performance**										
1	Co-channel		✓			+20			Tbl. E-11 (pg. 19)	Figs. E-5,6 (pgs. 17, 18)	3 receivers used Objective data only (no subjective recordings) Results for both upper and lower 1st- and 2nd-adj. chnl. interferers
2	Single 1st adj.		✓				+6		Tbl. E-9 (pg. 13)	Figs. E-1,2 (pgs. 11, 12)	
4	Single 2nd adj.		✓					-22			
3	Dual 1st adj.		✓				+6		Tbl. E-10 (pg. 16)	Figs. E-3,4 (pgs. 14, 15)	3 receivers used Objective data only (no subjective recordings) Upper 2nd @ -22 dB D/U Lower 2nd @ -20 dB D/U)
5	Single 2nd adj. w/single 1st adj.		✓				+6	-20/ -22			
6	Dual 2nd adj.		✓					-20/ -22			

Laboratory test data (FM, cont.):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
G	IBOC digital/analog compatibility performance in a multipath fading channel										
1	Co-channel				UF	+20			Tbl. E-7 (pg. 9)		1 receiver (Delco) Subjective recordings only (no objective data) Analog ref. also recorded (US recorded but not submitted)
2	Single 1st adj.				UF		+14 +6 -2				Upper and lower for 1 receiver (Delco) Subjective recordings only (no objective data) Analog ref. also recorded (US recorded but not submitted)
3	Dual 1st adj.				UF		+14 +6 -2				"
K	[illegible]										
1	Subjective assessment report of unimpaired IBOC audio quality versus analog FM		✓						Tbl. G-2 (pg. 4)		• Only 3 critical audio cuts recorded • Analog reference also recorded • No subjective evaluation performed

Laboratory test data (FM, cont.):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
L	**IBOC "digital-to-host-analog" compatibility performance**										
1	Host analog main channel audio performance vs. presence or absence of IBOC (linear channel)		✓						Tbl. E-12 (pg. 22)	Figs. E-7,8 (pgs. 20, 21)	Strong, moderate, and weak desired signal for 3 receivers Objective data only (no audio recordings)
2	Host analog main channel audio performance vs. presence or absence of IBOC (fading channel)				UF US				Tbl. E-8 (pg. 9)		1 receiver (Delco) Audio recordings only (no objective data) Analog ref. also recorded

Field test data (FM):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
B	Strong signal with low interference										
1	Low multipath				✓				Tbl. H-2 (pg. 14)	Figs. H-6 – H-8 (pgs. 12, 13, 15)	Host station: WETA-FM Results collected for six radials but only presented for one Three 5-minute recordings made
2	Strong multipath				✓						
3	Host main channel audio compatibility				✓				Tbl. H-4 (pg. 24)	Fig. H-9 (pg. 20),	Host station: WPOC-FM "Single-point" recordings made 3 receivers used
C	Single interferer										
1	Single 1st-adjacent channel interferer (at FCC limit)						✓		Tbl. H-3 (pg. 22)	Fig. H-9 (pg. 20)	Host station: WPOC-FM 1st adj. stations: WMMR-FM, WFLS-FM (both upper 1st adj.) "Single-point" recordings made Compatibility data only; 2 analog receivers used (Delco, Yamaha)
3	Single 1st-adjacent channel interferer (above FCC limit)						✓				

Laboratory test data (AM):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
B	TBOC system performance with AWGN										
1	Linear channel, no interferers	✓	✓						Tbl. K-1 (pg. 7)	Fig. K-7 (pg. 12)	• No audio recorded
D	TBOC "digital-to-digital" compatibility performance										
1	Co-channel	✓	✓			✓			Tbl. K-2 (pg. 8) Tbl. K-3 (pg.11 – co chan. and single 1st adj. only)	Figs. K-5, K-7 (pgs. 9, 12)	• No audio recorded • Only single lower 1st adj. case submitted • Measurements with both lower 1st adj. and co-channel also made
2	Single 1st-adj.	✓	✓				✓ (1)				
3	Dual 1st-adj.		✓				✓ (2)			Fig. K-6 (pg. 10)	

Laboratory test data (AM, cont.):

		CHANNEL				INTERFERERS D/U in dB					
NO.†	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
F	TBOC "digital-to-analog" compatibility performance										
1	Co-channel interference		✓			+36 +30 +24 +18			Appendix M - pgs. 18-22		5 receivers used Objective data only Analog ref. also measured
2	Single 1st-adj.		✓				+30 +24 +18 +12 +6		Appendix M - pgs. 13-17		" Only lower adj. channel case performed
*	Dual 1st-adj.		✓				+30 +24 +18 +12 +6		Appendix M - pgs. 23-27		5 receivers used Objective data only Analog ref. also measured
*	Simultaneous lower 1st-adj. and co-channel interference		✓			+36 +30 +24 +18	+24 +18 +12 +6		Appendix M - pgs. 28-32		"
3	Single 2nd-adj.		✓					+6 0 -6 -12 -18 -36	Appendix M - pgs. 8-12		" Only lower adj. channel case performed

† An * next to the test number indicates test data provided but not requested.

Laboratory test data (AM, cont.):

		CHANNEL				INTERFERERS *D/U in dB*					
NO.	ITEM	AWGN	LINEAR	NON-LINEAR	FADING	CO-CHAN	1ST-ADJ	2ND-ADJ	DATA	GRAPH	COMMENTS
K	DAB quality										
1	Subjective assessment report of unimpaired IBOC audio quality versus analog AM		✓						(mentioned in Sect. 4.5, Appendix L, pg. 13)		• Recordings actually made in the field • Only 3 critical audio cuts recorded • Analog reference also recorded • No subjective evaluation performed